

UNDER-SLAB GAS BARRIER / VAPOR BARRIER

Y40BAC

(ARCHITECTURAL SPEC)

PART 1 – GENERAL

1.1 SUMMARY

- A. Products Supplied Under This Section
 - 1. Gas / Vapor Barrier, Butyl Tape and Pipe Boots

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM D638 Standard Specification for Tensile Properties of Plastics
 - 2. ASTM D1004 Standard Test Method for Initial Tear Resistance of Plastic Film and Sheeting.
 - 3. ASTM E 96-A Standard Test Methods for Perms of Materials
 - 4. ASTM D 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting

1.3 SUBMITTALS

- A. Testing/Specifications
 - 1. Laboratory test results showing compliance with ASTM Standards.
 - 2. Manufacturer's samples, literature.
 - 3. Manufacturer's installation instructions for placement and seaming.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Provide a Gas Barrier / Vapor Retarder that meets the following:
 - 1. ASTM D638 Standard Specification for Tensile Properties of Plastics
 - a) Must meet a minimum tensile strength at break of 125 lbf/in or 21.8 N/mm
 - 2. ASTM D 1434 Standard Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheeting
 - a) Methane Permeance: $< 3.70E^{-13}$ m/s
 - 3. ASTM E 96-A Standard Test Methods for Perms of Materials
 - a) No greater than 0.0082 grains/(ft²·hr·in·Hg) or 0.0054 g/(24hr·m²·mm Hg) @ 73° F and 50% RH.

Other Manufacturer accepted meeting the above specification:

- CETCO Liquid Boot Company, +1 (714) 384-0111

2.2 ACCESSORIES

- A. Seam Tape
 - 1. Butyl Seal Tape by Raven Ind., +1 (800) 635-3456 or other 2" wide double-sided reinforced butyl rubber seaming tape.
- B. Pipe Boots
 - 1. Raven VaporBoot Plus pipe boots or other manufacturer's supplied pipe boot system.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Ensure that subsoil is approved by architect or engineering firm
 - 1. Level and tamp or roll granular base as specified. A base for a gas-reduction system may require a 4" to 6" gas permeable layer of clean coarse aggregate as specified by your architectural or structural drawings after installation of the recommended gas collection system.

3.2 INSTALLATION

A. Install Gas Barrier / Vapor Barrier:

1. Installation shall be in accordance with manufacturer's instructions, ASTM E 1643, ASTM D4437 and ASTM E2121 also provide valuable information regarding the installation of vapor / gas barriers

(Instructions on architectural or structural drawings should be reviewed and followed.)

- A. Unroll Absolute Barrier® running the longest dimension parallel with the direction of the pour and pull open all folds to full width, remove as many wrinkles as practical. Overlap edges 6" in preparation for thermal seaming.
- B. Absolute Barrier® may be attached to the vertical wall directly above the footings and fasten with a batten strip sealed with Butyl Seal Tape between the concrete surface and the Absolute Barrier® gas barrier (or as required by the design engineer, local building codes or as specified by architectural or structural drawings).
- C. Acceptable field welding methods are thermal fusion and extrusion. The thermal energy for fusion welding can be provided by a single or dual hot wedge welder, hot air or a combination. Extrusion welding rod should be made from the same resin class as the bonding surface of the gas barrier being extruded to.
- D. When installing Absolute Barrier®, seal around all plumbing, conduit, support columns or other penetrations that come through the Absolute Barrier® membrane. Lay the barrier as closely as possible to the penetrations to minimize patch work. Pipes four inches or smaller can be sealed with Raven VaporBoot Plus preformed pipe boots. If field prepared pipe boots made of Absolute Barrier® material are used instead, they should fit snugly but not require excessive force to pull over a pipe. Optional, Raven's POUR-N-SEAL™ can also be used to seal around difficult to reach penetrations.
- E. Absolute Barrier® holes or openings in the Absolute Barrier® less than 0.125 inches in diameter may be repaired with an extrusion bead of the same base polymer (LLDPE or HDPE) as the gas barrier membrane. Holes or openings in the Absolute Barrier® that are more than 0.125 inches in diameter shall be patched with the same membrane using either and hot air or an extrusion welding process. The patch shall extend at least 3 inches from the nearest damage if the damage area is less than 1 inch in diameter. When damage exceeds 1 inch in diameter the patch shall extend at least 6 inches from the nearest damage. All extrusion patches shall be vacuum box tested and hot air patches can be either air lanced or vacuum tested.

NOTE:

See manufacturers full-length Absolute Barrier® Installation Guidelines located at www.ravenefd.com for complete details.